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MONTHLY REPORT

1 APRIL - 30 APRIL 1959

INSTALLATION AND MAINTENANCE BRANCH OC-E

ENGINEERING STAFF

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1. The Installation of KW-26's for a full duplex circuit between [REDACTED] Signal Center and the [REDACTED] Signal Center was turned over to operations on 17 April for traffic. The ACAN path between the Pentagon and [REDACTED] has not been too good during the late evening hours but during the day time the reception has been very good.

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2. Operation of the [REDACTED] equipment at OCI has been quite sporadic. Critical adjustments, lack of spare parts, and limited experience of maintenance personnel are contributing factors. Mr. [REDACTED], a technician from the [REDACTED] has been very cooperative and has assisted us when necessary.

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3. One new Electronic Technician reported on duty during this reporting period. Six men departed for overseas assignments and eleven men are in process for overseas assignments.

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C, Installation & Maintenance Branch

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I WIRE MAINTENANCE SECTION

A. Trouble Reports

1. The Wire Maintenance Section shops in the Washington area have reported a total of two hundred forty-five troubles for the month of April.

The troubles as broken down for the different locations are as follows:

Signal Center	142
[REDACTED]	54
OCI	31
Outside Area (local)	18

This total shows a decrease of two troubles over the month of March. We are still very short of personnel, but additional stress has been put on routine maintenance this month, and all servicing for the month has been performed as scheduled. Several pieces of our equipment have been overhauled in our Rehab. Shop, and there should be a substantial decrease in troubles this next month.

B. Daily Activities

1. Project [REDACTED] has expanded again, and has taken over an additional room approximately 15 feet by 20 feet. We have relocated their equipment, and completely rewired their Signal Center.

2. Three telephone company lines 10-GL-1111, 41-GC-78 and 41-GC-79 were checked out between the [REDACTED] Signal Center and the Pentagon. Circuit 10-GL-1111 is the voice line to Pentagon Radio control, and 41-GC-78 and 41-GC-79 are the KW-26 receive and transmit circuits to [REDACTED]. These circuits were turned over to Operations on 17 April after two weeks of engineering tests. The radio paths between the Pentagon and [REDACTED] have not been too good during the late evening hours, but during the daytime our reception has been excellent. The "B" Model of the KW-26 is being used on this circuit and to date we haven't had one trouble reported due to faulty equipment. Operation is at the present time 60 W.P.M.

3. The first of this month a KW-26 full duplex circuit was installed between the OCI Signal Center and the [REDACTED] Special Signal Center. The "A" Model KW-26 was used on this circuit, which was the next model after the NSA development model. We have had some difficulty in getting the bugs out of this equipment. We have had alarm relay trouble, balanced amplifier trouble, coreboard trouble and a considerable amount of telephone company line trouble. The telephone company found

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that their lines were unbalanced, and since this was corrected we have had fewer troubles. The KW-26 B seems to be far more reliable than the KW-26 A according to the limited experience we have had with both models.

4. One new Tiny Tot was installed at Project [REDACTED] this month and we have a SIGTOT unit in our shop for [REDACTED] but they have now decided they want a Tiny Tot, and we will order as soon as they give us something in writing.

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5. Nine Model 28 printing units were overhauled at our Rehab. Shop for [REDACTED] Street, and the servicing has been brought up to date.

6. The emergency NSA teletype line, 10 WU 2392, between OCI and NSA, Nebraska Ave., was brought into a miscellaneous jack on the KW-26 switchboard. This line will be used in the event of trouble at NSA, Ft. Meade and is designated as AY-18-94. This designation will be used when reporting line troubles rather than the line number, this for reasons of security.

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7. The [REDACTED] equipment has consistently given us trouble this month. At one time when both of the units at OCI were down, and our technician was unable to get either unit working, the [REDACTED] technician was called into help. After working on these units on two different occasions he managed to get both units working. Some of the adjustments on the [REDACTED] are too critical, and our technicians with their limited experience have to spend a lot of time just to keep them in operation. Operational wise these units actually operate at approximately forty-five words per minute, and engineering wise they have been a constant headache to us.

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8. At the [REDACTED] Signal Center two Model 19 teletypewriters were requested. One was ordered from the Warehouse, checked out at our rehab shop, and installed in the Signal Center. The other Model 19 is being taken from the SIGTOT unit removed from the Special Signal Center OCI circuit. Another Model 19 was ordered by the Signal Center Manual Code Branch, and this was checked out and delivered.

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9. Our technician at the Rehab. Shop has been carrying a very heavy work load with his many duties involving overhaul work for the area, T & I support, Warehouse support, the handling of our P.T.I.'s, and the classified material in our Rehab. Secure Vault. This month twenty-nine Model 28 teletypewriters returned from the [REDACTED] Warehouse were checked, repaired and returned to Warehouse Class 1 stock. It is estimated that there were fifteen left to be done. Nine Model 28 teletypewriters were overhauled and several teletype items were checked for T & I for completeness and proper packing.

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10. This Section has lost four men PCS, and we have four men in school at [REDACTED]. At this time we are having to keep this area going with nine men out of our T.O. of eighteen men. The Signal Center has been cut from five men to three men, and our other local areas are operating with one man, except our [REDACTED] shop which has none. May will see some of the returnees coming back, and by fall, if some new men come on board, we may be back to normal operation.

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- C. Listed below are the several projects we have on hand, but because of our heavy work load and our acute shortage of men these projects have not been started.

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1. The fabrication and wiring of a seventy-two line teletype switchboard for [REDACTED]

2. The fabrication and wiring of a twenty-four line "classified" switchboard to be used with the KW-26 at the [REDACTED] Signal Center.

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3. The fabrication and wiring of a twenty-four line "unclassified" switchboard for the KW-26 at the [REDACTED] Signal Center.

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4. The assembling and adjusting of the six "10-20" line counters [REDACTED] All of the parts are now in stock.

5. We have one hundred and four pieces of teletype equipment that is now in class-3-06 in the [REDACTED] Warehouse that will have to be repaired by our Rehab. Shop.

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A total of eighty hours was spent in Project [REDACTED] this month, mostly by two men, in clearing troubles, servicing, and revamping their Signal Center.

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II. ELECTRONIC MAINTENANCE SECTION

A. Microwave

1. Regular maintenance visits were made to both microwave installations. Minor defects noted were repaired.

2. Three trouble calls were reported, and are as follows:

a. Two transmitter Klystron tubes and a Sensitrol Relay were replaced in the Station "RJ" R.F. equipment.

b. The Standby I.F. Strip was replaced in the R.F. equipment at Station "J".

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B. Washington Disaster Plan

1. Regular maintenance visits were made to [REDACTED] Room 2, and to two vehicles of the V.H.F. Net.

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2. The trouble calls received are as follows:

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a. The [REDACTED] V.H.F. Repeater equipment was in a steady transmit state, which caused interference through the V.H.F. Net. A tube was replaced in the receiver squelch circuit, the equipment was then tested and returned to service.

b. The V.H.F. equipment in the DCI's vehicle was reported inoperative and remained out of operation for approximately three days. The reason for this long delay was that the car could not be released long enough for us to install a replacement V.H.F. unit.

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c. The DCI's Protective Staff reported that they were having trouble hearing the transmissions from the cars. A complete check was made of the equipment, but no apparent trouble was found. While testing the equipment it was discovered that the V.H.F. transmitter located at [REDACTED] was not operating efficiently. The Station maintenance personnel was notified, and the equipment has been repaired.

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3. Tests were conducted by the [REDACTED] maintenance personnel to determine the coverage offered by the Security Office V.H.F. Net between [REDACTED] and Headquarters. The tests show that for a distance of 10 - 15 miles [REDACTED] there is a dead spot where the cars cannot hear either Headquarters or [REDACTED]. However, Headquarters and [REDACTED] can receive the transmissions from the cars. We will make a similar test, and then notify SEB of our findings.

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4. Preventive maintenance has been performed on eight Motorola Handie-Talkie units for the Office of Security.

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5. The Trylon tower repair contract has been awarded to the [REDACTED] Washington, D.C. Their bid was \$1840 which was approximately \$3,500.00 less than the other bidders.

6. Preventive maintenance was performed on the emergency equipment located in the vaulted area at the [REDACTED] Warehouse.

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C. KY-1 Voice Privacy System

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1. Only one trouble was reported on the KY-1 units. However, trouble was encountered on the telephone company switchboard located in Room [REDACTED]

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2. All but two KY-1 units have been delivered to the various subscribers. The two units not delivered are the units loaned to the Engineering Lab. [REDACTED]

3. The KY-1 units located in the following offices have been put into operation.

DDP-COPS	[REDACTED]	Building
DDS-D/SEC	[REDACTED]	Building
DDP-C/FE	[REDACTED]	Building

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4. The KY-1 switchboard automatic register readings for the period 27 March to 27 April 1959 are as follows:

Signal Center	441 calls
DDI	136 calls
DDS	110 calls
DCO	138 calls

A total of 2789 calls were counted for this period.

D. 6ST Equipment

1. All but one channel of the Motorola A.F.C. equipment has been checked out, and teletype ranges of 70-80 points were obtained. The one bad channel has a defective Oscillator-Modulator. We are in the process of repairing this unit.

2. All of the Engineering Modification Work Orders Applicable to the 6ST equipment located at the IMB Shop [REDACTED] have been performed with the exception of number 25. This modification doubles the capacity of the TAC-1 R.F. Ammeter, and cannot be performed until a later date.

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E. AS-4A and associated equipment

1. A modification has been performed on the AS-4A which will turn on an alarm light and buzzer when the test simulator is used in the automatic or semi-automatic position.

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2. A technician was obtained from the [REDACTED] Company for the repair of the [REDACTED]. The printer operated satisfactory for a few days then it became defective again. All the other equipment is operating well.

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F. Special Projects

1. The installation of the [REDACTED] equipment in the Willys Jeep for the Office of Security has been completed.

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2. One transmitter was relocated and one 231D transmitter was installed at [REDACTED]

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III MECHANICAL MAINTENANCE SECTION

A. Preventative maintenance was performed on all emergency power generators as scheduled each Friday.

B. Two 5 KW Katolite generators were tested for T&I. A defective voltmeter was replaced on one unit. 25X1A6a

25X1A2d1 C. The power units in the 6ST that was returned from [REDACTED] by [REDACTED] were checked. Both units will require a complete overhaul.

IV BRANCH SUPPLY

A. Requisitions and Property Turn Ins

1. Equipment ordered this month as requested by OC-E/IMB is as follows:

a. The Wire Maintenance Section requested one work bench, one Berkley Electronic Frequency meter, three racks for switchboard fabrication, one Sigma Relay test set, four Model 28 ASR teletypewriter sets, four Model 28 Reperforators, and six Par Metal Racks for KW-26 installation at a total cost of \$17,545.35.

b. The Electronic Maintenance Section requested one Motorola VTVM, one Portable order wire, and one Palmgren vise, and one Stratolite magnifying glass at a total cost of \$892.90.

c. The Mechanical Maintenance Section requested four storage batteries at a total cost of \$44.52.

2. Five requisitions consisting of 75 line items were processed for field shipment at a total cost of \$2,236.40.

3. As of 24 April \$53,886.52 has been expended for spare parts required to maintain stock levels for equipment serviced by OC-E/IMB and to fill requests by the field stations.

4. One Model 19 table, five transmitter distributors, series motor and five transmitter distributors synchronous motor were P.T.I.'d to Warehouse stock.

5. Cable for the disseminator circuit at [REDACTED] has not yet been received. 25X1A6a

B. Cryptographic Material and Equipment

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1. Two gear sets (106WPM) were shipped (per MSB) to [REDACTED]

2. The accountability of two KW-26 Crypto devices has been transferred from the OC-E Cryptographic Officer to the respective accountable officers at OCI [REDACTED] and the Signal Center [REDACTED] 25X1A6a

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3. Ten line items of cryptographic material, equipment and test cards have been charged to the Cryptographic Officer this month.

C. Tiny Tot

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Eleven and eight each slip junction guards have been ordered by [REDACTED] respectively. Since these items are part of the Transmitter Distributor no stock level was kept on these assemblies. Parts to fabricate these assemblies have been ordered.

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D. [REDACTED]

The cable and terminal blocks ordered for Project [REDACTED] have been received.

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E. Other Activities

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1. The remaining space available in the parts drawers located in [REDACTED] was inventoried. There are 240 empty parts drawers.

The parts drawers in use average eight parts per drawer, with this average as a basis it can be assumed that approximately 2,000 line items can be stocked in this remaining space.

There are approximately 600 line items which are still to be stocked. These items come from various sources; forty seven are on outstanding Teletype requests for Model 28 parts, fifty are outstanding KL-9 parts due in from the National Security Agency, and the remainder are KL-47 and KW-26 spares which are part of kits which will be separated and stocked individually. After these items are stocked the remaining empty drawer space will be equivalent to 165 drawers.

2. Used parts returned from the respective WMS shops was sorted, parts still usable were returned to stock, the remaining will be sent to the warehouse for disposal.

3. Blanket requisitions for fiscal 1960 covering parts available from National Security Agency and diesel oil were typed per General Procurement Branch's request.

4. Model 28 ASR, TD, and Reperforator: Spare Parts

A total of 138 line items were received this month. Prices were adjusted, parts stocked and location cards made. As of 24 April a total of 825 line items have been received, this leaves a total of 47 line items still outstanding.

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Approved For Release 2000/09/11 : CIA-RDP78-02820A000500020002-2

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